WETLANDS DELINEATION REPORT BARITE HILLS NEVADA GOLD FIELDS MCCORMICK, MCCORMICK COUNTY, SOUTH CAROLINA TETRA TECH TDD NUMBER: TTEMI-05-003-0019



Prepared for

U.S. Environmental Protection Agency, Region 4
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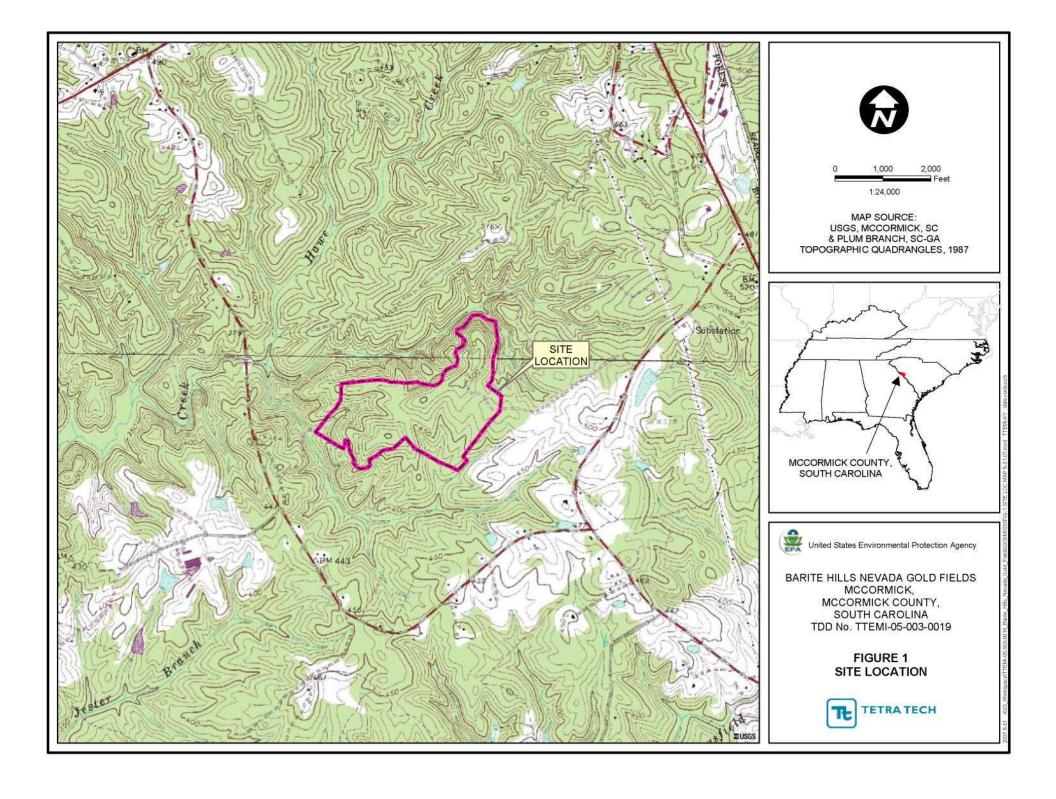
SECTION 1 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked the Tetra Tech Superfund Technical Assessment and Response Team (START) to conduct wetland delineations for the Barite Hills Nevada Gold Fields (Barite Hills) site located in McCormick, McCormick County, South Carolina (EPA Identification Number [No.] SCD987597903). Wetland delineations were completed under Contract No. EP-W-05-054, Technical Direction Document (TDD) No. TTEMI-05-003-0019. The objective of the wetlands delineation was to document whether the wetland area located along the unnamed tributary west of the Barite Hills property meets the Hazard Ranking System (HRS) eligibility requirement as defined by 40 Code of Federal Regulations (CFR) Section 230.3.

The former Barite Hills site encompasses about 795.2 acres and is located about 3 miles southwest of the town of McCormick on the northern side of secondary Highway S-33-30 and about 0.75 mile northwest of the intersection of Highways S-33-44 and S-33-30 in McCormick County, South Carolina (see Figure 1). The delineation was performed west of the Barite Hills site along an unnamed tributary of Hawe Creek, which consisted of approximately .76 acre and National Pollution Discharge Elimination System (NPDES) Outfall 1 where runoff from the site has a potential to impact the wetland area. The objectives of the delineation included mapping the existing jurisdictional wetlands, collecting surface water and sediment samples from the wetlands, evaluating target populations for the surface water migration pathway, and determining if the wetlands meet the Hazard Ranking System (HRS) wetland classification standards.

The Barite Hills site was actively mined for gold and silver from 1992 until 1995. Mining operations at the Barite Hills site encompassed 135.5 acres, and the remaining 659.7 acres served as a buffer zone not to be disturbed beyond its natural state. The Barite Hills site consists of two open mine pits, a process plant, a reusable heap leach facility, a permanent leach pad and permanent leach pad solutions ponds, two waste disposal areas, and diversion ditches that direct runoff off site. The wetland area has not been developed and has historically been forested land.

On June 12 and 13, 2007, a Tetra Tech environmental scientist, Mr. Kyle Russell, performed delineation of the wetlands, and a Tetra Tech environmental scientist, Shanna Davis, collected surface water and sediment samples along the wetland area to determine whether the wetlands had been affected by the



Barite Hills site. Surface water and sediment sampling results are addressed in the Expanded Site Inspection report prepared by Tetra Tech (2007). A Tetra Tech geographic information system specialist, Dale VonBusch, collected geographic positioning system (GPS) data points of the surface water and sediment sampling locations as well as of the wetland area outline.

The wetlands report was not prepared as part of a permit requirement; therefore, it was not submitted to the U.S. Army Corps of Engineers (USACE) and the South Carolina Department of Health and Environmental Control (SCDHEC) for wetland verification. The wetland area delineated as part of this study meets the requirements of HRS-eligible wetlands, as defined in 40 CFR 230.3.

SECTION 2 MATERIALS AND METHODS

Wetlands at the Barite Hills site were delineated according to the USACE Wetlands Delineation Manual, dated January 1987, Technical Report Y-87-1, specifically Part IV, Section D, routine determination. Wetland vegetation indicator status was determined by using the National List of Plant Species that Occur In Wetlands: Southeast (Region 2), dated May 1988, Biological Report 88(26.2). Soils on the site were identified using a Munsell Soil Color Chart (2000 Revised Washable Edition) and taxonomically verified by the Soil Survey of McCormick County, South Carolina (2004). Wetlands were delineated by using the three parameter approach, which includes verification of hydrophytic vegetation, hydric soils, and hydrology. Twelve routine wetland delineation field sheets were completed (see Appendix A).

Aerial photographs and soil maps were reviewed prior to delineating the wetland boundary to gain insight into the potential locations of distinct wetlands. Upon completion of the review, the site was traversed to characterize wetland and upland areas. Once the wetland and upland areas were characterized, the boundary of the wetland was identified in the transition zone between wetlands and uplands. The wetland boundary was flagged with fluorescent flagging tape and red pin flags labeled according to the field sheet numbering, and GPS coordinates were collected.

SECTION 3 RESULTS AND DISCUSSION

One main non-isolated wetland was identified adjacent to the Barite Hills site. The wetland is located along an unnamed tributary of Hawe Creek which flows from south to north. Eleven samples were collected along the perimeter of the wetland, and one sample was collected outside to delineate between hydric and non-hydric soils. According to the national wetlands inventory, the wetland is a palustrine forested wetland and meets the Title 40 Code of Federal Regulations Section 230.3 definition of an HRS wetland. Table 1 summarizes the wetland area delineated. Figure 2 presents the delineated wetland area.

TABLE 1: DELINEATED WETLAND AT BARITE HILLS

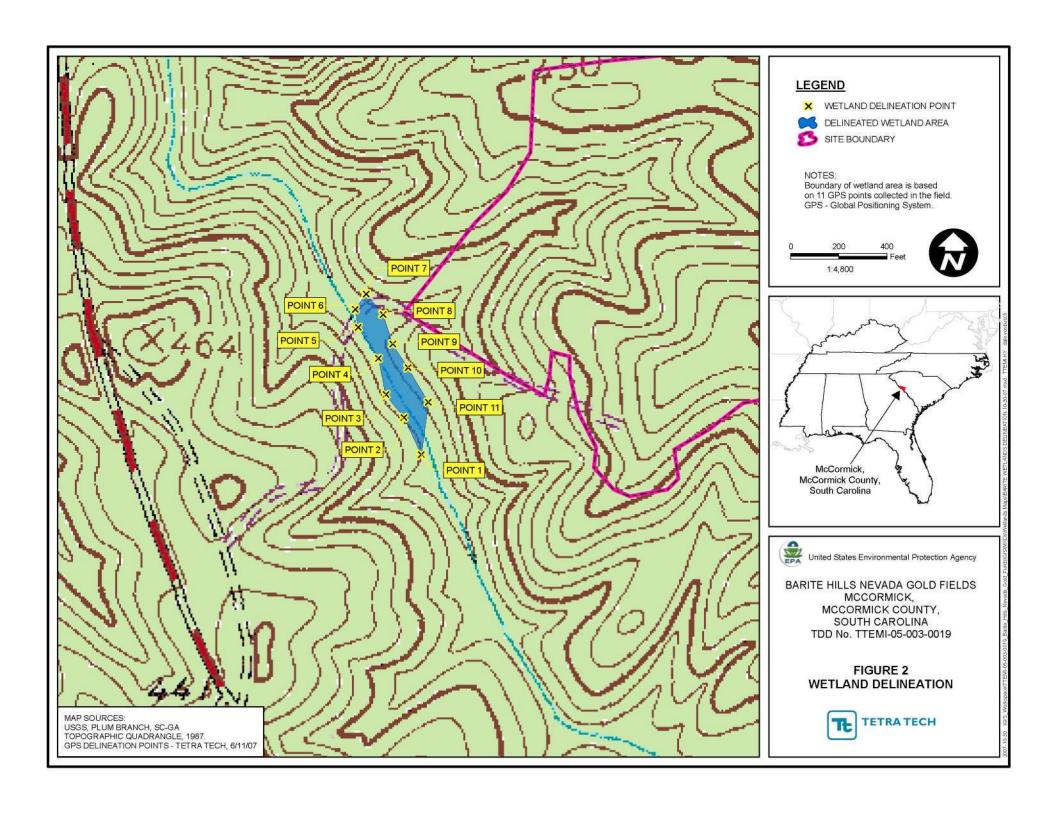
Wetland Area (Map ID)	Location	Туре	Soils	Acreage (approximate)	Atypical Situation
1	West of the Barite Hills site	Forested	Cartecay, Toccoa	0.76	Not applicable

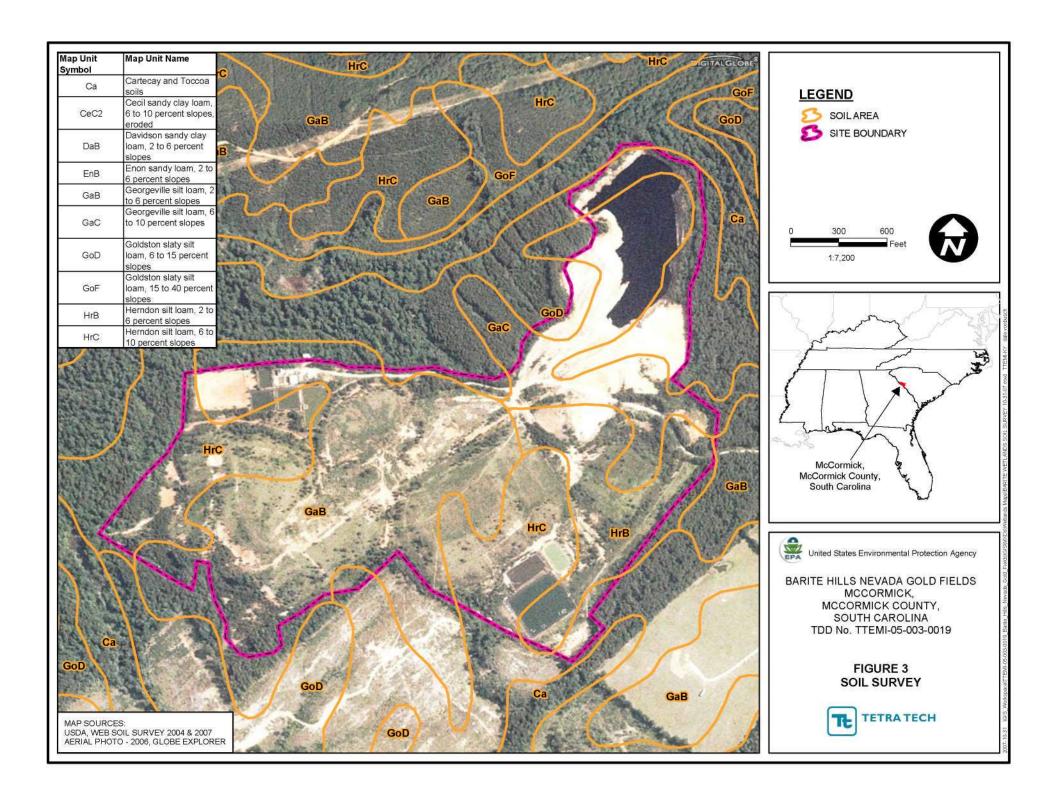
3.1 SOILS

The U.S. Department of Agriculture, Soil Conservation Service Soil Survey for McCormick County (2001) was used to evaluate the presence of hydric soils. The soil survey is presented on Figure 3. According to the soil survey the following types of soils were identified near the Barite Hills site:

- Cartecay (Ca) Coarse-loamy, 0 to 2 percent slope, somewhat poorly drained with a high water table
- Toccoa (Ca) Coarse loamy, 0 to 4 percent slope, well drained to moderately well drained, 2- to 5-foot perched water table
- Georgeville (GaB) Fine, well drained with moderate permeability, 2 to 6 percent slopes
- Goldston (GoD) Loamy, 6 to 15 percent slope, and well drained to excessively drained soils with a greater than 6-foot perched water table
- Herndon (HrC) Fine, 6 to 10 percent slopes, well drained with moderately permeable soils with a 6-foot water table

Of these soil types only Cartecay and Toccoa are listed on the National Hydric Soils List. Cartecay soils are on nearly level flood plains in narrow valleys of streams. The Cartecay soils series occur along the unnamed tributary of Hawe Creek where the wetland is located.





3.2 DELINEATED WETLAND AREAS

The wetland area as identified on Figure 2, is located west of the Barite Hills site, near NPDES Outfall 1, and is influenced primarily from an unnamed tributary of Hawe Creek. Mapped soils in these areas primarily consist of Cartecay, Toccoa, and Georgeville, with some Goldston, and Herndon occurring, as well. Hydric soils identified in the field consisted of soil chromas that ranged from 10YR 4/3, brown, with no mottling to a 10YR 4/3, yellowish brown, with 10 to 15 percent mottling (see Appendix A). Non-hydric soils consisted of a soil chroma that was in the range of 5YR 4/3 with a weak to medium granular structure. Vegetation consisted of mixed forested, scrub-shrub, and emergent in the wetland area. Forested vegetation in the wetlands was very similar between upland and wetland areas, primarily being dominated by Carolina Ash (*Fraxinus caroliniana*), Sugar Maple (*Acer saccharum*), common greenbriar (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), Tulip Poplar (*Liriodendron tulipifera*), Sweet Gum (*Liquidambar styraciflua*) and Chinese Privet (*Ligustrum sinense*). Transitional areas were defined by the presence of hydrologic indicators, such as water marks on trees and presence of drainage patterns, inundated soils, and facultative neutral testing.

SECTION 4 CONCLUSIONS

The total area delineated consists of 0.76 acre of wetlands to the west of the Barite Hills site. Several minor tributaries and wet weather conveyances occur near the wetland. Soils were typical wetland soils for the area with low chromas and bright mottles. Soils identified during the delineation primarily confirmed the soil survey mapping unit. It is noted that the wetland does fit the characterization of an HRS wetland; specifically it is identified as a palustrine forested wetland. The areas where wetlands occurred were primarily within the Cartecay soils and to a lower extent in the Toccoa soils. Hydrology for the wetland area was impacted by surface water runoff, via sheet flow through various drainage creeks or wet weather conveyances, as well as high water tables.

The wetlands report was not prepared as part of a permit requirement; therefore, it was not submitted to the USACE and SCDHEC for wetland verification. The wetland area delineated as part of this study meets the requirements of HRS eligible wetlands, as defined in 40 CFR 230.3.

In October 1989, Barite Hills obtained a Nationwide 26 permit which authorized the discharge into nontidal waters with a flow rate of less than 5 cubic feet per second. Specifically, the permit authorized the fill of isolated wetlands that would affect less than 10 acres provided that a wetland reclamation/creation plan was implemented. In 1994, the Nationwide 26 permit was not renewed by Barite Hills since no additional wetland would be affected. In July 1999, Barite Hills filed for Chapter 11 bankruptcy, and in July of the same year, the keys to Barite Hills were given to SCDHEC and the site was abandoned. Since no operations exist at the site, a 404 permit is not required at this time.

Impacts to the aquatic and terrestrial life were not studied during this event. However, ESI surface water and sediment sample results indicated the presence of arsenic, cadmium, chromium, copper, lead, and zinc at elevated concentrations. Therefore, it should be assumed that impacts to wildlife could be present.

SECTION 5 REFERENCES

Munsell Color Company. 2000. Munsell Soil Color Charts, Revised Washable Edition. Baltimore: Munsell Color Company.

Reed, P. B. 1988. "National List of Plant Species that Occur In Wetlands: Southeast (Region 2)." Biological Report 88 (26.2). National Ecology Research Center, U. S. Fish and Wildlife Service.

Tetra Tech EM Inc. 2007. Expanded Site Inspection Report for Barite Hills Nevada Gold Fields, McCormick, McCormick County, South Carolina.

- U.S. Department of Agriculture. National Resource Conservation Service. 2004. Soil Survey of McCormick County, South Carolina.
- U.S. Army Corps of Engineers. 1987. Wetlands Delineation Manual. Technical Report Y-87-1. Part IV, Section D. January.
- U.S. Department of Agriculture. 2001. Soil Conservation Service Soil Survey for McCormick County.

APPENDIX A FIELD DATA SHEETS (WTD-1 THROUGH WTD-12)

Project / Site:	Barite Hills Nevada	Gold Fields	elds Date:		6/12/07			
Applicant / Owner:	USEPA		State:	South		th Carolina		
Investigator:	Kyle Russell		County:		McCormick			
Plot ID:			Do Normal Circumstances exist on site?		YES		NO	
Transect ID:	N/A		Atypical Situation?		YES	Х	NO	
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO	

Dor	ninant Plant Species	Indicator	Stratum	Dominant Plant Species		Indicator	Stratum	
1.	Carolina Ash	OBL T		6. Common Green brier		V	FAC	
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU	
3.	American Beauty Berry	FACU-	SS	8.	Sycamore	T	FACW-	
4.	Chinese Privet	FAC	SS	9.	Sweet Gum	T	FAC+	
5.	Poison Ivy	FAC	V	10.	River Birch	Т	FACW	
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	7/10 =70%						
Rer	A prevalence of hydrophytic	vegetation is	present					

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	TORS		
Gauge		Primary Indicators:	Secondary Indicators:		
Aerial Photograph		Inundated	Oxidized Root Channels		
Other		Saturated (upper 12")	Water-stained Leaves	X	
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X	
Depth of Surface Water (inches)	n/a	Drift Lines	FAC-Neutral Test	X	
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)		
Depth to Saturated Soil (inches)	0	Drainage Patterns			
Wetland hydrology is present	70	**	X-	- C	
Remarks:					

SOILS

	ries / Phase: Cartecay ainage Class: Poorly Drained				Confirmed Map Type? Subgroup:	Yes Aquic Udifluvents			
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan	Texture / ce Concretions	Indicators			
0-5	Ap	Ap 10YR 4/3			Loam	Sulfitic Odor	X		
5-10	Ap	7.5YR 5/6		X anaasaa s	Loam	Low Chroma / Gleyed Color	X		
10-12	C1	10YR 5/4	10 YR3/3	few	Sandy loam	Hydric Soils List (local / US) Concretions Organic Streaking Other (see remarks)			

	c Vegetation Present? drology Present?	X	Yes Yes	No No	Is this sampling point in a	X	Yes	No
Hydric Soils	s Present?	X	Yes	No	wetland?	VII.V.		1 10100000
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada	Gold Fields	elds Date:		6/12/07			
Applicant / Owner:	USEPA		State:		South Carolina			
Investigator:	Kyle Russell		County:		McCormick			
Plot ID:			Do Normal Circumstances exist on site?		YES		NO	
Transect ID:	N/A		Atypical Situation?		YES	Х	NO	
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO	

Dor	ninant Plant Species	Indicator	Stratum	Dom	inant Plant Species	Indicator	Stratum		
1.	Carolina Ash	OBL	T	6.	Common Green brier	V	FAC		
2.	Sugar Maple	FACW	Ţ	7.	Tulip Poplar	T	FACU		
3.	American Beauty Berry	FACU-	SS	8.	Sycamore	T	FACW-		
4.	Chinese Privet	FAC	SS	9.	Sweet Gum	T	FAC+		
5.	Poison Ivy	FAC	V	10.	River Birch	Т	FACW		
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	7/10=70%							
Rer	A prevalence of hydrophytic	vegetation is	present						

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	TORS		
Gauge		Primary Indicators:	Secondary Indicators:		
Aerial Photograph		Inundated	Oxidized Root Channels		
Other		Saturated (upper 12")	Water-stained Leaves	X	
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X	
Depth of Surface Water (inches)	n/a	Drift Lines	FAC-Neutral Test	X	
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)		
Depth to Saturated Soil (inches)	0	Drainage Patterns			
Wetland hydrology is present	70	**	X-	- C	
Remarks:					

SOILS

Series / P Drainage		Cartecay Poorly Draine	d		Confirmed Map Type? Subgroup:		Yes Aquic Udifluvents			
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan		Texture / Concretions	Indicators	~		
0-5	Ap	10YR 4/3	10YR 4/3			Loam	Sulfitic Odor			
5-10 10-12	Ap		7. 112.00.00.00 .03		Loam	Low Chroma / Gleyed Color	Х			
	C1		few		Sandy loam	Hydric Soils List (local / US) Concretions Organic Streaking Other (see remarks)				

	c Vegetation Present? /drology Present?	X	Yes Yes	No No	Is this sampling point in a	×	Yes	No
Hydric Soil		X	Yes	No	wetland?	5.0		/5555
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:		6/12/07			
Applicant / Owner:	USEPA		State:		South Carolina			
Investigator:	Kyle Russell		County:	McCormick				
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO	
Transect ID:	N/A		Atypical Situation?		YES	Х	NO	
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO	

Dor	ninant Plant Species	Indicator Stratum [Dom	ninant Plant Species	Indicator	Stratum
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU
3.	American Beauty Berry	FACU-	SS	8.	Sycamore	T	FACW-
4.	Chinese Privet	FAC	SS	9.	Sweet Gum	T	FAC+
5.	Poison Ivy	FAC	V	10.	River Birch	Т	FACW
	cent of Dominant Species = _, FACW, or FAC (excluding FAC-)	7/10-70%					
	A prevalence of hydrophytic		present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	TORS	
Gauge		Primary Indicators:	Secondary Indicators:	
Aerial Photograph		Inundated	Oxidized Root Channels	
Other		Saturated (upper 12")	Water-stained Leaves	X
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X
Depth of Surface Water (inches)	n/a	Drift Lines	FAC-Neutral Test	X
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)	
Depth to Saturated Soil (inches)	0	Drainage Patterns	<u> </u>	
Wetland hydrology is present	100		20	-
Remarks:				

SOILS

Series / Phase: Drainage Class:		Cartecay Poorly Draine	d		Confirmed Map Type? Subgroup:	Yes Aquic Udifluvents	
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan	Texture / ce Concretions	Indicators	
0-5	Ap	10YR 4/3			Loam	Sulfitic Odor	Х
5-10	Ap	7.5YR 5/6		t o namena s	Loam	Low Chroma / Gleyed Color	X
10-12	C1	10YR 5/4	10 YR3/3	common	Sandy loam	Hydric Soils List (local / US) Concretions Organic Streaking Other (see remarks)	

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X Yes No X Yes No		0.000.000	Is this sampling point in a	X	Yes	No
Hydric Soils			Yes	No	wetland?			1 10100000
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:		6/12/07			
Applicant / Owner:	USEPA		State:		South Carolina			
Investigator:	Kyle Russell		County:	McCormick				
Plot ID:	1,000		Do Normal Circumstances exist on site?	X	YES		NO	
Transect ID:	N/A		Atypical Situation?		YES	Х	NO	
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO	

Indicator	Stratum
V	FAC
T	FACU
Т	FACW-
T	FAC+
Т	FACW

HYDROLOGY

Recorded Data (c	describe in remarks)		WETLAND HYDROLOGY INDICA	TORS	
Gauge	***		Primary Indicators:	Secondary Indicators:	
Aerial Photograph Other No Recorded Data Available			Inundated	Oxidized Root Channels	
			Saturated (upper 12")	Water-stained Leaves	X
		X	Water Marks	Local Soil Survey Data	X
Depth of Sur	face Water (inches)	n/a	Drift Lines	FAC-Neutral Test	X
Depth to Wat	ter in Pit (inches)	0	Sediment Deposits	Other (see remarks)	
Depth to Sati	urated Soil (inches)	0	Drainage Patterns	 >	
Remarks: Wetl	land hydrology is present	**	*	<u>.</u>	Ċ

SOILS

				Subgroup:	Yes Aquic Udifluvents		
lorizon	Matrix Color	Mottle Color	Mottle Abundance	Texture / e Concretions	Indicators		
Ap	10YR 4/3			Loam	Sulfitic Odor	Х	
Ap	7.5YR 5/6		X anaasaa s	Loam	Low Chroma / Gleyed Color	Х	
C1	10YR 6/3			Sandy loam	Hydric Soils List (local / US) Concretions Organic Streaking		
	Ap Ap	Color Ap 10YR 4/3 Ap 7.5YR 5/6	Color Color Ap 10YR 4/3 Ap 7.5YR 5/6	Color Color Abundance Ap 10YR 4/3 Ap 7.5YR 5/6	Color Color Abundance Concretions Ap 10YR 4/3 Loam Ap 7.5YR 5/6 Loam	Color Color Abundance Concretions Ap 10YR 4/3 Loam Sulfitic Odor Ap 7.5YR 5/6 Loam Low Chroma / Gleyed Color C1 10YR 6/3 Sandy loam Hydric Soils List (local / US) Concretions	

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X Yes No			Is this sampling point in a	X	Yes	No
Hydric Soils Present?		X	Yes	No	wetland?		100	/3355
Remarks:	The soils were observed to b	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:		6/12/07		
Applicant / Owner:	USEPA		State:		South Carolina		
Investigator:	Kyle Russell		County:	McCormick			
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO
Transect ID:	N/A		Atypical Situation?		YES	Х	NO
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO

Dor	ninant Plant Species	Indicator Stratum [Dom	inant Plant Species	Indicator	Stratum
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU
3.	American Beauty Berry	FACU-	SS	8.	Sycamore	T	FACW-
4.	Chinese Privet	FAC	SS	9.	Sweet Gum	T	FAC+
5.	Poison Ivy	FAC	V	10.	River Birch	Т	FACW
Per OBI	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	7/10=70%					
Rer	A prevalence of hydrophytic	vegetation is	present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	TORS		
Gauge		Primary Indicators:	Secondary Indicators:		
Aerial Photograph		Inundated	Oxidized Root Channels		
Other		Saturated (upper 12")	Water-stained Leaves	X	
o Recorded Data Available		Water Marks	Local Soil Survey Data		
Depth of Surface Water (inches)	5	Drift Lines	FAC-Neutral Test Other (see remarks)	X	
Depth to Water in Pit (inches)	0	Sediment Deposits			
Depth to Saturated Soil (inches)	0	Drainage Patterns			
Wetland hydrology is present Remarks:		*- -	**) <u>h</u> .	

SOILS

Series / P Drainage		Cartecay Poorly Drained			Confirmed Map Type? Subgroup:		Yes Aquic Udifluvents		
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundar		Texture / Concretions	Indicators		
0-5	Ap	10YR 4/3				Loam	Sulfitic Odor	Х	
5-10	Ap	7.5YR 5/6		(3-12-2-1-1)	1	Loam	Low Chroma / Gleyed Color	Х	
10-12	C1	10YR 6/3		10000000		Sandy loam	Hydric Soils List (local / US) Concretions Organic Streaking		
Remarks							Other (see remarks)		

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X	Yes	No No	Is this sampling point in a	X	Yes	No
				No	wetland?	5.5		/3355
Remarks:	The soils were observed to b	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:	6/12/07				
Applicant / Owner:	USEPA		State:	South Carolina				
Investigator:	Kyle Russell		County: McCo			ormick		
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO	
Transect ID:	N/A		Atypical Situation?		YES	Х	NO	
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO	

Dor	ninant Plant Species	Indicator	Stratum	Dom	inant Plant Species	Indicator	Stratum
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU
3.	American Beauty Berry	FACU-	SS	8.	Sycamore	T	FACW-
4.	Chinese Privet	FAC	SS	9.	Sweet Gum	T	FAC+
5.	Poison Ivy	FAC	V	10.			
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	6/9=66%					
Ren	A prevalence of hydrophytic	vegetation is	present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	ATORS		
Gauge		Primary Indicators:	Secondary Indicators:		
Aerial Photograph		Inundated	Oxidized Root Channels		
Other		Saturated (upper 12")	Water-stained Leaves	X	
No Recorded Data Available		Water Marks	Local Soil Survey Data	X	
Depth of Surface Water (inches)	13	Drift Lines	FAC-Neutral Test	X	
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)		
Depth to Saturated Soil (inches)	0	Drainage Patterns	X		
Remarks: Wetland hydrology is present	**				

SOILS

Series / P Drainage		Cartecay Poorly Drained	d			rmed Map Type? roup:	Yes Aquic Udifluvents	
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan		Texture / Concretions	Indicators	
0-5	Ap	10YR 4/3				Loam	Sulfitic Odor	Х
5-12	Ар	7.5YR 4/1		100000000000000000000000000000000000000	Loam Sulfitic O	Low Chroma / Gleyed Color Hydric Soils List (local / US)	X	
							Concretions Organic Streaking Other (see remarks)	

Hydrophytic Vegetation Present? Wetland Hydrology Present?		X	Yes	No				
		X	Yes	No	Is this sampling point in a	X	Yes	No
Hydric Soils	s Present?	X	Yes	No	wetland?			
Remarks:	The soils were observed to b	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:	6/12/07			
Applicant / Owner:	USEPA		State:	South Carolina			
Investigator:	Kyle Russell		County:	McCormick			
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO
Transect ID:	N/A		Atypical Situation?		YES	Х	NO
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO

Dor	minant P	Plant Species	Indicator	Stratum	Don	ninant Plant Species	Indicator	Stratum
1.	Carolii	na Ash	OBL	Т	6.	Common Green brier	V	FAC
2.	Sugar	Maple	FACW	Т	7.	Tulip Poplar	T	FACU
3.	Americ	can Beauty Berry	FACU-	SS	8.	Sweet Gum	T	FAC+
4.	Chines	se Privet	FAC	SS	9.			1
5.	Poisor	ı Ivy	FAC	V	10.			
Per	cent of I L, FACW	Dominant Species = //, or FAC (excluding FAC-)	6/8=75%					
Rer	narks:	A prevalence of hydrophytic	vegetation is	present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	ATORS		
Gauge		Primary Indicators:	Secondary Indicators:		
Aerial Photograph		Inundated	Oxidized Root Channels		
Other		Saturated (upper 12")	Water-stained Leaves	X	
No Recorded Data Available	ecorded Data Available X		Local Soil Survey Data	X	
Depth of Surface Water (inches)	n/a	Drift Lines	FAC-Neutral Test	X	
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)		
Depth to Saturated Soil (inches)	0	Drainage Patterns	X		
Remarks: Wetland hydrology is present	**		b M	*	

SOILS

Series / P Drainage		Cartecay Poorly Drained	d			rmed Map Type? roup:	Yes Aquic Udifluvents	
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan		Texture / Concretions	Indicators	
0-5	Ap	10YR 4/3				Loam	Sulfitic Odor	Х
5-12	Ар	7.5YR 4/1		100000000000000000000000000000000000000	Loam Sulfitic Od Low Chroid Hydric Soi	Low Chroma / Gleyed Color Hydric Soils List (local / US)	X	
							Concretions Organic Streaking Other (see remarks)	

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X Yes No			Is this sampling point in a	X	Yes	No
		X	Yes	No	wetland?	J. 2		
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:	6/1	2/07		
Applicant / Owner:	USEPA		State:	South Carolina			(
Investigator:	Kyle Russell		County:	Mo	McCormick		
Plot ID:			Do Normal Circumstances exist on site?		YES	i.	NO
Transect ID:	N/A		Atypical Situation?		YES	Х	NO
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO

Dor	ninant Plant Species	Indicator	Stratum	Dom	inant Plant Species	Indicator	Stratum	
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC	
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU	
3.	American Beauty Berry	FACU-	SS	8.	Sweet Gum	T	FAC+	
4.	Chinese Privet	FAC	SS	9.				
5.	Poison Ivy	FAC	V	10.			1	
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	6/8=75%						
Rer	A prevalence of hydrophytic	vegetation is	present					

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDIC	ATORS	
Gauge		Primary Indicators:	Secondary Indicators:	
Aerial Photograph		Inundated	Oxidized Root Channels	
Other		Saturated (upper 12")	Water-stained Leaves	X
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X
Depth of Surface Water (inches)	12	Drift Lines	FAC-Neutral Test	X
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)	
Depth to Saturated Soil (inches)	0	Drainage Patterns	X	
Wetland hydrology is prese	nt		8 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	7.5
Remarks:				

SOILS

Series / P Drainage		Poorly Drained		Confirmed Map Type? Subgroup:		Yes Aquic Udifluvents			
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan		Texture / Concretions	Indicators		
0-5	Ap	10YR 4/3				Loam	Sulfitic Odor	Х	
5-12	Ар	7.5YR 4/1		100000000000000000000000000000000000000	1	Loam	Low Chroma / Gleyed Color Hydric Soils List (local / US)	X	
							Concretions Organic Streaking Other (see remarks)		

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X	Yes Yes	No No	Is this sampling point in a	X	Yes	No
		X	Yes	No	wetland?	5.0		/5555
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:	6/12/07			
Applicant / Owner:	USEPA		State:	South Carolina			
Investigator:	Kyle Russell		County:	McCormick			
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO
Transect ID:	N/A		Atypical Situation?		YES	Х	NO
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO

Dor	ninant Plant Species	Indicator	Stratum	Dom	inant Plant Species	Indicator	Stratum	
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC	
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU	
3.	American Beauty Berry	FACU-	SS	8.	Sweet Gum	T	FAC+	
4.	Chinese Privet	FAC	SS	9.				
5.	Poison Ivy	FAC	V	10.			1	
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	6/8=75%						
Rer	A prevalence of hydrophytic	vegetation is	present					

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDIC	ATORS	
Gauge		Primary Indicators:	Secondary Indicators:	
Aerial Photograph		Inundated	Oxidized Root Channels	
Other		Saturated (upper 12")	Water-stained Leaves	X
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X
Depth of Surface Water (inches)	36	Drift Lines	FAC-Neutral Test	X
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)	
Depth to Saturated Soil (inches)	0	Drainage Patterns	X	
Wetland hydrology is present				
Remarks:				

SOILS

Series / P Drainage		Cartecay Poorly Drained		Confirmed Map Type? Subgroup:		Yes Aquic Udifluvents			
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundar		Texture / Concretions	Indicators		
0-5	Ap	10YR 4/3				Loam	Sulfitic Odor	Х	
5-12	Ap	7.5YR 4/1	PROPERTY.	(American)	3	Loam	Low Chroma / Gleyed Color Hydric Soils List (local / US) Concretions Organic Streaking Other (see remarks)	X	

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X Yes No			Is this sampling point in a	X	Yes	No
		X	Yes	No	wetland?	J. 2		
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada Gold Fields		Date:	6/12/07			
Applicant / Owner:	USEPA		State:		South Carolina		
Investigator:	Kyle Russell		County:	McCormick			
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO
Transect ID:	N/A		Atypical Situation?		YES	Х	NO
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO

Dor	ninant Plant Species	Indicator	Stratum	Don	ninant Plant Species	Indicator	Stratum
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU
3.	American Beauty Berry	FACU-	SS	8.	Sweet Gum	T	FAC+
4.	Chinese Privet	FAC	SS	9.			
5.	Poison Ivy	FAC	V	10.			
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	6/8=75%					
Ren	A prevalence of hydrophytic	vegetation is	present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	ATORS	
Gauge	-	Primary Indicators:	Secondary Indicators:	
Aerial Photograph		Inundated	Oxidized Root Channels	
Other		Saturated (upper 12")	Water-stained Leaves	X
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X
Depth of Surface Water (inches)	n/a	Drift Lines	FAC-Neutral Test	X
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)	
Depth to Saturated Soil (inches)	0	Drainage Patterns	X	
Remarks: Wetland hydrology is present	**		b M	*

SOILS

	eries / Phase: Cartecay rainage Class: Poorly Drained					rmed Map Type? roup:	Yes Aquic Udifluvents			
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan		Texture / Concretions	Indicators			
0-5	Ap 10YR 4/3					Loam	Sulfitic Odor			
5-12	Ap	7.5YR 4/1	THE STATE OF THE S	Service const	1	Loam	Low Chroma / Gleyed Color Hydric Soils List (local / US) Concretions Organic Streaking Other (see remarks)	X		

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X Yes No		No No	Is this sampling point in a	X	Yes	No
		X	Yes	No	wetland?	5.0		/5555
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada	Gold Fields	Date:	6/12/07					
Applicant / Owner:	USEPA		State:		South Carolina				
Investigator:	Kyle Russell		County:	McCormick		<			
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO		
Transect ID:	N/A		Atypical Situation?		YES	Х	NO		
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO		

Dor	ninant Plant Species	Indicator	Stratum	Don	ninant Plant Species	Indicator	Stratum
1.	Carolina Ash	OBL	Т	6.	Common Green brier	V	FAC
2.	Sugar Maple	FACW	Т	7.	Tulip Poplar	T	FACU
3.	American Beauty Berry	FACU-	SS	8.	Sweet Gum	T	FAC+
4.	Chinese Privet	FAC	SS	9.			
5.	Poison Ivy	FAC	V	10.			
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	6/8=75%					
Ren	A prevalence of hydrophytic	vegetation is	present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	ATORS	
Gauge		Primary Indicators:	Secondary Indicators:	
Aerial Photograph		Inundated	Oxidized Root Channels	
Other		Saturated (upper 12")	Water-stained Leaves	X
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	X
Depth of Surface Water (inches)	7	Drift Lines	FAC-Neutral Test	X
Depth to Water in Pit (inches)	0	Sediment Deposits	Other (see remarks)	
Depth to Saturated Soil (inches)	0	Drainage Patterns	X	
Wetland hydrology is present	*		i a	

SOILS

Series / P Drainage		Cartecay Poorly Drained	d			rmed Map Type? roup:	Type? Yes Aquic Udifluvents	
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundan		Texture / Concretions	Indicators	
0-5	Ap	10YR 4/3				Loam	Sulfitic Odor	Х
0-5 5-12	Ар	7.5YR 4/1	1		us ā	Loam	Low Chroma / Gleyed Color Hydric Soils List (local / US)	X
							Concretions Organic Streaking Other (see remarks)	

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		X Yes No		No No	Is this sampling point in a	X	Yes	No
		X	Yes	No	wetland?	5.0		/5555
Remarks:	The soils were observed to be	e saturated	and poo	rly drained.	Hydric soils are present			

Project / Site:	Barite Hills Nevada	Gold Fields	Date:	6/12/07			
Applicant / Owner:	USEPA		State:		South Carolina		
Investigator:	Kyle Russell		County:	McCormick		<	
Plot ID:			Do Normal Circumstances exist on site?	X	YES		NO
Transect ID:	N/A		Atypical Situation?		YES	Х	NO
Community ID:	N/A		Is the area a potential problem area?		YES	Х	NO

Dor	ninant Plant Species	Indicator	Stratum	Don	inant Plant Species	Indicator	Stratum
1.	Carolina Ash	OBL	T	6.	Common Green brier	V	FAC
2.	Sugar Maple	FACW	Ţ	7.	Tulip Poplar	T	FACU
3.	Sycamore	FACW-	T	8.	Sweet Gum	T	FAC+
4.	Chinese Privet	FAC	SS	9.			
5.	Poison Ivy	FAC	V	10.			
	cent of Dominant Species = L, FACW, or FAC (excluding FAC-)	6/8=75%					
Ren	A prevalence of hydrophytic	vegetation is	present				

HYDROLOGY

Recorded Data (describe in remarks)		WETLAND HYDROLOGY INDICA	TORS	
Gauge	*	Primary Indicators:	Secondary Indicators:	
Aerial Photograph		Inundated	Oxidized Root Channels	
Other		Saturated (upper 12")	Water-stained Leaves	
No Recorded Data Available	X	Water Marks	Local Soil Survey Data	
Depth of Surface Water (inches)	n/a	Drift Lines	FAC-Neutral Test Other (see remarks)	X
Depth to Water in Pit (inches)	0	Sediment Deposits		
Depth to Saturated Soil (inches)	0	Drainage Patterns	*	
Remarks: Wetland hydrology is not pre	esent	*	Ar-) <u>.</u>

SOILS

Series / Phase: Drainage Class:		Toccoa Well drained to	o moderately w	ell drained	Confirmed Map Type' Subgroup:	Yes Thermic Typic Udifluvents		
Depth (inches)	Horizon	Matrix Color	Mottle Color	Mottle Abundar		Indicators		
0-12	Ар	5YR 4/3			Sandy Loam	Sulfitic Odor Low Chroma / Gleyed Color Hydric Soils List (local / US) Concretions Organic Streaking Other (see remarks)		

Hydrophytic Vegetation Present?	X	Yes		No			T		No
Wetland Hydrology Present?		Yes Yes	X	No No	Is this sampling point in a wetland?	Yes	3	X	
Hydric Soils Present?									
Remarks:									